



### *Dr. Peter C. Kong*

*More than 20 years of experience in thermal plasma synthesis and processing of materials.*

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**Education:** Dr. Peter C. Kong earned his B.S. in Chemistry and Physics at Lincoln University; M.S. in Chemistry from the University of North Carolina at Greensboro; and his Ph.D. in Metallurgy and Materials Science at the University of Minnesota.

**Work experience:** Dr. Kong began his career at the INL in 1990 as the technical leader for research in plasma processing. From 1985 to 1990, he was a research faculty member in the Mechanical Engineering Department at the University of Minnesota.

#### **Licensing information**

For information on licensing INL technologies such as those developed by Dr. Kong, contact the Lead Account Executive for Industrial Processing and Manufacturing:

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**Professional endeavors:** Dr. Kong's research is primarily focused on industrial plasma process development. His research areas include plasma technology development for natural gas conversion to high value liquids, heavy oil upgrade, black liquor gasification and white liquor chemicals recovery. He also leads research in nanoparticle synthesis, development of advanced coating deposition methods and systems, electrochemical materials development for energy conversion, high temperature cermet filters for hazardous materials destruction, hydrogen carrier materials research, advanced hybrid plasma systems research and development, plasma processes for nuclear and hazardous wastes destruction, and glass-ceramic waste form research and development for nuclear waste stabilization. He enjoys formulating high-risk research for processes or systems to solve complex problems. Dr. Kong likes to collaborate with academics and industries to improve production methods. He has published more than 40 contributed and invited papers in plasma material and plasma waste processing. He has served as program and session chairman for several international plasma conferences.

#### **Patents:**

U.S. Patent No. 5,427,747 – Methods and Apparatus for Producing Oxygenates from Hydrocarbons

U.S. Patent No. 5,626,726 – Method for Cracking Hydrocarbon Compositions Using a Submerged Reactive Plasma System

U.S. Patent No. 5,906,757 – Liquid Injection Plasma Deposition Method and Apparatus

U.S. Patent No. 5,935,293 – Plasma Fast Quench Reactor and Method

U.S. Patent No. 6,103,948 – Solid Catalyzed Isoparaffin Alkylation at Supercritical Fluid Conditions

U.S. Patent No. 6,120,706 – Process for Producing an Aggregate Suitable for Inclusion into a Radiation Shielding Product

U.S. Patent No. 6,187,226 – Thermal Device and Method for Production of Carbon Monoxide and Hydrogen by Thermal Dissociation of Hydrocarbon Gases

U.S. Patent No. 6,372,156 – Methods of Chemically Converting First Materials to Second Materials Utilizing Hybrid-Plasma Systems

U.S. Patent No. 6,395,197 – Hydrogen and Elemental Carbon Production from Natural Gas and Other Hydrocarbons